

checked by IT  
11/16/15

## MEMORANDUM

**TO:** Mr. Addison Rice  
Anderson, Mulholland and Associates

**DATE:** November 11, 2015

**FROM:** R. Infante

**FILE:** 1510351A

**RE:** Data Validation  
Air samples  
**SDG:** 1510351A

### SUMMARY

Full validation was performed on the data for several gas samples analyzed for volatile organic compounds (full suite) by method Compendium Method TO-15: Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999. The samples were collected at the Building 6 VI, Bristol Myer Squib, Humacao, PR site on October 18, 2015 and submitted to Eurofins Air Toxics, Inc. of Folsom, California that analyzed and reported the results under delivery groups (SDG) 1510351A.

The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: Compendium Method TO-15. Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999; Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #4. October, 2006. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

In general the data is valid as reported and may be used for decision making purposes. The data results are acceptable for use. Results for the following analytes were qualified as estimated due to RPD outside generally acceptable control limits:

- Acetone; hexane; 4-methyl-2-pentanone; toluene; styrene; 1,2,4-trimethylbenene; and naphthalene in samples B30IA-4 101715/B30IA-4D 101715.
- Acetone; 2-propanol; carbon disulfide; methylene chloride; methyl ethyl ketone; heptane; and cumene in samples B8IA-2 101715/B8IA-2D 101715.

### SAMPLES

The samples included in the review are listed below

Client Sample ID	Lab. Sample ID	Collected Date	Matrix	Analysis
B30IA-1 101715	1510351A-01A	10/18/2015	Air	VOCs
B30IA-2 101715	1510351A-02A	10/18/2015	Air	VOCs
B30IA-3 101715	1510351A-03A	10/18/2015	Air	VOCs
B30IA-4 101715	1510351A-04A	10/18/2015	Air	VOCs
B30IA-4D 101715	1510351A-05A	10/18/2015	Air	VOCs
B30IA-5 101715	1510351A-06A	10/18/2015	Air	VOCs
B42IA-1 101715	1510351A-07A	10/18/2015	Air	VOCs
B42IA-2 101715	1510351A-08A	10/18/2015	Air	VOCs
B42IA-3 101715	1510351A-09A	10/18/2015	Air	VOCs
B3042AA 101715	1510351A-10A	10/18/2015	Air	VOCs
B8IA-2 101715	1510351A-11A	10/18/2015	Air	VOCs
B8IA-2D 101715	1510351A-12A	10/18/2015	Air	VOCs
B8AA-1 101715	1510351A-13A	10/18/2015	Air	VOCs

## REVIEW ELEMENTS

Sample data were reviewed for the following parameters, where applicable to the method

- Agreement of analysis conducted with chain of custody (COC) form
- Holding time and sample preservation
- Gas chromatography/mass spectrometry (GC/MS) tunes
- Initial and continuing calibrations
- Method blanks/trip blanks/field blank
- Canister cleaning certification criteria
- Surrogate spike recovery
- Internal standard performance and retention times
- Field duplicate results
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results
- Quantitation limits and sample results

## DISCUSSION

### Agreement of Analysis Conducted with COC Request

Sample reports corresponded to the analytical request designated on the chain-of-custody form except for the following:

- Sample 1510351A-14A not analyzed.

### Holding Times and Sample Preservation

Sample preservation was acceptable.

Samples analyzed within method recommended holding time.

## GC/MS Tunes

The frequency and abundance of bromofluorobenzene (BFB) tunes were within the QC acceptance criteria. All samples were analyzed within the tuning criteria associated with the method.

## Initial and Continuing Calibrations

### VOCs - Methanol (Method TO-15)

One point calibration curve performed. Ongoing accuracy of the instrument was determined by the analysis of a continuing calibration standard.

## Method Blank/Trip Blank/Field Blank

Target analytes were not detected in laboratory method blanks.

Summa canister met cleaning certification criteria.

No trip/field blank analyzed with this data package.

## Surrogate Spike Recovery

The surrogate recoveries as per method TO-15 were within the laboratory QC acceptance limits in all samples analyzed. ASTM method for VOCs does not require surrogate standards.

## Internal Standard Performance

### VOCs - Methanol

Samples were spiked with the method specified internal standard. Internal standard are performance and retention times met the QC acceptance criteria in all sample analyses and calibration standards.

## Laboratory/Field Duplicate Results

Field/laboratory duplicates were analyzed as part of this data set. Target analytes meet the RPD performance criteria of + 25 % for analytes 5 x SQL except for the analytes shown on the worksheet.

## LCS/LCSD Results

LCS/LCSD (blank spike) analyzed by the laboratory associated with this data package; % recoveries and RPD within laboratory and generally acceptable control limits.

## Quantitation Limits and Sample Results

Dilutions were performed on TO-15 samples (see worksheet).

Calculations were spot checked.

**Certification**

The following samples 1510351A-01A; 1510351A-02A; 1510351A-03A; 1510351A-04A; 1510351A-05A; 1510351A-06A; 1510351A-07A; 1510351A-08A; 1510351A-09A; 1510351A-10A; 1510351A-11A; 1510351A-12A; and 1510351A-13A were analyzed following standard procedures accepted by regulatory agencies. The quality control requirements met the methods criteria except in the occasions described in this document. The results are valid.

Rafael Infante  
Rafael Infante  
Chemist License 1888





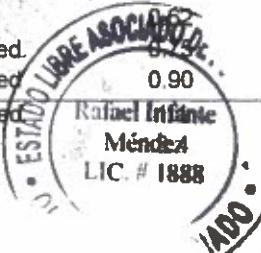
Air Toxics

Client Sample ID: B30IA-1 101715

Lab ID#: 1510351A-01A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	v102108	<b>Date of Collection:</b> 10/18/15 11:00:00 A		
<b>Dil. Factor:</b>	1.66	<b>Date of Analysis:</b> 10/21/15 01:26 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.83	0.47 J	4.1	2.3 J
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.83	0.93	1.7	1.9
Vinyl Chloride	0.17	Not Detected	0.42	Not Detected
1,3-Butadiene	0.17	0.079 J	0.37	0.18 J
Bromomethane	0.83	Not Detected	3.2	Not Detected
Chloroethane	0.83	Not Detected	2.2	Not Detected
Freon 11	0.17	0.27	0.93	1.5
Ethanol	0.83	25	1.6	48
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Acetone	0.83	54	2.0	130
2-Propanol	0.83	25	2.0	61
Carbon Disulfide	0.83	0.92	2.6	2.9
3-Chloropropene	0.83	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	2.8	1.2	9.7
Methyl tert-butyl ether	0.17	0.064 J	0.60	0.23 J
trans-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Hexane	0.17	3.5	0.58	12
1,1-Dichloroethane	0.17	Not Detected	0.67	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.83	6.6	2.4	19
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Tetrahydrofuran	0.83	1.1	2.4	3.2
Chloroform	0.17	0.064 J	0.81	0.31 J
1,1,1-Trichloroethane	0.17	Not Detected	0.90	Not Detected
Cyclohexane	0.17	0.63	0.57	2.2
Carbon Tetrachloride	0.17	0.062 J	1.0	0.39 J
2,2,4-Trimethylpentane	0.83	0.80 J	3.9	3.8 J
Benzene	0.17	0.47	0.53	1.5
1,2-Dichloroethane	0.17	0.077 J	0.67	0.31 J
Heptane	0.17	2.6	0.68	11
Trichloroethene	0.17	0.051 J	0.89	0.27 J
1,2-Dichloropropane	0.17	0.71	0.77	3.3
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.75	Not Detected
4-Methyl-2-pentanone	0.17	0.34	0.68	1.4
Toluene	0.17	9.3	35	
trans-1,3-Dichloropropene	0.17	Not Detected	0.54	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.90	Not Detected
Tetrachloroethene	0.17	Not Detected	0.54	Not Detected
2-Hexanone	0.83	0.33 J	1.3 J	



**Client Sample ID: B30IA-1 101715**

**Lab ID#: 1510351A-01A**

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v102108	Date of Collection: 10/18/15 11:00:00 A		
Dil. Factor:	1.66	Date of Analysis: 10/21/15 01:26 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	0.033 J	0.76	0.15 J
Ethyl Benzene	0.17	1.1	0.72	4.9
m,p-Xylene	0.17	3.7	0.72	16
o-Xylene	0.17	0.87	0.72	3.8
Styrene	0.17	2.5	0.71	10
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	0.11 J	0.82	0.56 J
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.1	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	0.23	0.82	1.1
1,3,5-Trimethylbenzene	0.17	0.054 J	0.82	0.26 J
1,2,4-Trimethylbenzene	0.17	0.18	0.82	0.87
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.83	Not Detected	4.3	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.83	Not Detected UJ	6.2	Not Detected UJ
Hexachlorobutadiene	0.83	Not Detected	8.8	Not Detected
Naphthalene	0.83	Not Detected	4.4	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	93	70-130



Client Sample ID: B30IA-2 101715

Lab ID#: 1510351A-02A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v102109	Date of Collection: 10/18/15 11:26:00 A		
Dil. Factor:	1.67	Date of Analysis: 10/21/15 02:19 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	0.37 J	4.1	1.8 J
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	0.80 J	1.7	1.6 J
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.2	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.21	0.94	1.2
Ethanol	0.84	8.1	1.6	15
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Acetone	0.84	17	2.0	42
2-Propanol	0.84	16	2.0	39
Carbon Disulfide	0.84	0.11 J	2.6	0.36 J
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	0.16 J	1.2	0.57 J
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Hexane	0.17	0.28	0.59	0.97
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	3.2	2.5	9.5
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.91	Not Detected
Cyclohexane	0.17	0.066 J	0.57	0.23 J
Carbon Tetrachloride	0.17	0.059 J	1.0	0.37 J
2,2,4-Trimethylpentane	0.84	0.064 J	3.9	0.30 J
Benzene	0.17	0.092 J	0.53	0.29 J
1,2-Dichloroethane	0.17	0.070 J	0.68	0.28 J
Heptane	0.17	0.23	0.68	0.94
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.77	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	0.18	0.68	0.73
Toluene	0.17	0.49	2.63	1.8
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.91	Not Detected
Tetrachloroethene	0.17	Not Detected	fuel Influent	Not Detected
2-Hexanone	0.84	0.39 J	Méndez	1.6 J
			IC # 1058	





## Air Toxics

Client Sample ID: B30IA-2 101715

Lab ID#: 1510351A-02A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102109	Date of Collection:	10/18/15 11:26:00 A	
Dil. Factor:	1.67	Date of Analysis:	10/21/15 02:19 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Ethyl Benzene	0.17	Not Detected	0.72	Not Detected
m,p-Xylene	0.17	0.16 J	0.72	0.69 J
o-Xylene	0.17	0.063 J	0.72	0.27 J
Styrene	0.17	0.051 J	0.71	0.22 J
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.1	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	0.044 J	0.82	0.22 J
1,3,5-Trimethylbenzene	0.17	0.035 J	0.82	0.17 J
1,2,4-Trimethylbenzene	0.17	0.069 J	0.82	0.34 J
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.84	Not Detected	4.3	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected UJ	6.2	Not Detected UJ
Hexachlorobutadiene	0.84	Not Detected	8.9	Not Detected
Naphthalene	0.84	Not Detected	4.4	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	92	70-130
4-Bromo fluorobenzene	93	70-130





## Air Toxics

Client Sample ID: B30IA-3 101715

Lab ID#: 1510351A-03A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102110	Date of Collection: 10/18/15 11:59:00 A		
Dil. Factor:	1.72	Date of Analysis: 10/21/15 03:05 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.86	0.41 J	4.2	2.0 J
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.86	0.74 J	1.8	1.5 J
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.86	Not Detected	3.3	Not Detected
Chloroethane	0.86	Not Detected	2.3	Not Detected
Freon 11	0.17	0.25	0.97	1.4
Ethanol	0.86	4.9	1.6	9.2
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	5.4	2.0	13
2-Propanol	0.86	13	2.1	32
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	0.34	1.2	1.2
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Hexane	0.17	0.18	0.61	0.62
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	0.70 J	2.5	2.0 J
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.84	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Cyclohexane	0.17	Not Detected	0.59	Not Detected
Carbon Tetrachloride	0.17	0.084 J	1.1	0.53 J
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.17	0.093 J	0.55	0.30 J
1,2-Dichloroethane	0.17	Not Detected	0.70	Not Detected
Heptane	0.17	0.071 J	0.70	0.29 J
Trichloroethene	0.17	0.24	0.92	1.3
1,2-Dichloropropane	0.17	Not Detected	0.79	Not Detected
1,4-Dioxane	0.17	Not Detected	0.62	Not Detected
Bromodichloromethane	0.17	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
4-Methyl-2-pentanone	0.17	0.055 J	0.70	0.22 J
Toluene	0.17	0.32	0.65	1.2
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Tetrachloroethene	0.17	Not Detected	4.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



## Air Toxics

Client Sample ID: B30IA-3 101715

Lab ID#: 15103S1A-03A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102110	Date of Collection: 10/18/15 11:59:00 A		
Dil. Factor:	1.72	Date of Analysis: 10/21/15 03:05 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.79	Not Detected
Ethyl Benzene	0.17	Not Detected	0.75	Not Detected
m,p-Xylene	0.17	0.11 J	0.75	0.49 J
o-Xylene	0.17	0.047 J	0.75	0.21 J
Styrene	0.17	0.094 J	0.73	0.40 J
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.84	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.84	Not Detected
4-Ethyltoluene	0.17	0.053 J	0.84	0.26 J
1,3,5-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,2,4-Trimethylbenzene	0.17	0.048 J	0.84	0.23 J
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.86	Not Detected	4.4	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected UJ	6.4	Not Detected UJ
Hexachlorobutadiene	0.86	Not Detected	9.2	Not Detected
Naphthalene	0.86	Not Detected	4.5	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	88	70-130





Client Sample ID: B30IA-4 101715

Lab ID#: 1510351A-04A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102111	Date of Collection:	10/18/15 11:38:00 A	
Dil. Factor:	1.60	Date of Analysis:	10/21/15 03:41 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.80	0.45 J	4.0	2.2 J
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.80	0.91	1.6	1.9
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Chloroethane	0.80	Not Detected	2.1	Not Detected
Freon 11	0.16	0.25	0.90	1.4
Ethanol	0.80	5.8	1.5	11
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.80	12 J	1.9	30
2-Propanol	0.80	13	2.0	32
Carbon Disulfide	0.80	0.16 J	2.5	0.49 J
3-Chloropropene	0.80	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	0.66	1.1	2.3
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Hexane	0.16	0.36 J	0.56	1.3
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	1.1	2.4	3.4
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.78	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Cyclohexane	0.16	0.13 J	0.55	0.44 J
Carbon Tetrachloride	0.16	0.067 J	1.0	0.42 J
2,2,4-Trimethylpentane	0.80	0.042 J	3.7	0.20 J
Benzene	0.16	0.10 J	0.51	0.32 J
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	0.20	0.66	0.84
Trichloroethene	0.16	Not Detected	0.86	Not Detected
1,2-Dichloropropane	0.16	0.068 J	0.74	0.31 J
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	0.098 J	0.66	0.40 J
Toluene	0.16	1.0 J	4.0	
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.80	Not Detected	IC 3.7888	Not Detected





Air Toxics

Client Sample ID: B30IA-4 101715

Lab ID#: 1510351A-04A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102111	Date of Collection:	10/18/15 11:38:00 A
Dil. Factor:	1.60	Date of Analysis:	10/21/15 03:41 PM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.4
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2
Chlorobenzene	0.16	Not Detected	0.74
Ethyl Benzene	0.16	0.16	0.69
m,p-Xylene	0.16	0.35	0.69
<i>o</i> -Xylene	0.16	0.17	0.69
Styrene	0.16	0.20 J	0.68
Bromoform	0.16	Not Detected	1.6
Cumene	0.16	Not Detected	0.79
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1
Propylbenzene	0.16	Not Detected	0.79
4-Ethyltoluene	0.16	0.055 J	0.79
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79
1,2,4-Trimethylbenzene	0.16	0.062 J	0.79
1,3-Dichlorobenzene	0.16	Not Detected	0.96
1,4-Dichlorobenzene	0.16	Not Detected	0.96
alpha-Chlorotoluene	0.80	Not Detected	4.1
1,2-Dichlorobenzene	0.16	Not Detected	0.96
1,2,4-Trichlorobenzene	0.80	Not Detected UJ	5.9
Hexachlorobutadiene	0.80	Not Detected	8.5
Naphthalene	0.80	0.49 J	4.2
		J	2.6 J

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130



Client Sample ID: B30IA-4D 101715

Lab ID#: 1510351A-05A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v102122 1.51	Date of Collection:	10/18/15 11:38:00 A	
Dil. Factor:		Date of Analysis:	10/21/15 11:01 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.76	0.45 J	3.7	2.2 J
Freon 114	0.15	Not Detected	1.0	Not Detected
Chloromethane	0.76	0.93	1.6	1.9
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
1,3-Butadiene	0.15	Not Detected	0.33	Not Detected
Bromomethane	0.76	Not Detected	2.9	Not Detected
Chloroethane	0.76	Not Detected	2.0	Not Detected
Freon 11	0.15	0.26	0.85	1.4
Ethanol	0.76	5.5	1.4	10
Freon 113	0.15	0.064 J	1.2	0.49 J
1,1-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Acetone	0.76	8.6 J	1.8	20
2-Propanol	0.76	12	1.8	29
Carbon Disulfide	0.76	0.19 J	2.4	0.59 J
3-Chloropropene	0.76	Not Detected	2.4	Not Detected
Methylene Chloride	0.30	0.67	1.0	2.3
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Hexane	0.15	0.23 J	0.53	0.83
1,1-Dichloroethane	0.15	Not Detected	0.61	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.76	1.2	2.2	3.6
cis-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Tetrahydrofuran	0.76	Not Detected	2.2	Not Detected
Chloroform	0.15	Not Detected	0.74	Not Detected
1,1,1-Trichloroethane	0.15	Not Detected	0.82	Not Detected
Cyclohexane	0.15	Not Detected	0.52	Not Detected
Carbon Tetrachloride	0.15	0.053 J	0.95	0.33 J
2,2,4-Trimethylpentane	0.76	0.056 J	3.5	0.26 J
Benzene	0.15	0.11 J	0.48	0.35 J
1,2-Dichloroethane	0.15	0.053 J	0.61	0.21 J
Heptane	0.15	0.16	0.62	0.65
Trichloroethene	0.15	0.19	0.81	1.0
1,2-Dichloropropane	0.15	Not Detected	0.70	Not Detected
1,4-Dioxane	0.15	Not Detected	0.54	Not Detected
Bromodichloromethane	0.15	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
4-Methyl-2-pentanone	0.15	0.70 J	2.9	
Toluene	0.15	0.44 J	1.7	
trans-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
1,1,2-Trichloroethane	0.15	Not Detected	Not Detected	Not Detected
Tetrachloroethene	0.15	Not Detected	Not Detected	Not Detected
2-Hexanone	0.76	0.17 J	0.69 J	





## Air Toxics

Client Sample ID: B30IA-4D 101715

Lab ID#: 1510351A-05A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102122	Date of Collection: 10/18/15 11:38:00 A		
Dil. Factor:	1.51	Date of Analysis: 10/21/15 11:01 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.15	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.15	Not Detected	1.2	Not Detected
Chlorobenzene	0.15	Not Detected	0.70	Not Detected
Ethyl Benzene	0.15	0.11 J	0.66	0.47 J
m,p-Xylene	0.15	0.24	0.66	1.0
o-Xylene	0.15	0.12 J	0.66	0.54 J
Styrene	0.15	0.091 J <b>J</b>	0.64	0.39 J
Bromoform	0.15	Not Detected	1.6	Not Detected
Cumene	0.15	Not Detected	0.74	Not Detected
1,1,2,2-Tetrachloroethane	0.15	Not Detected	1.0	Not Detected
Propylbenzene	0.15	Not Detected	0.74	Not Detected
4-Ethyltoluene	0.15	0.11 J	0.74	0.54 J
1,3,5-Trimethylbenzene	0.15	0.047 J	0.74	0.23 J
1,2,4-Trimethylbenzene	0.15	0.13 J <b>J</b>	0.74	0.62 J
1,3-Dichlorobenzene	0.15	Not Detected	0.91	Not Detected
1,4-Dichlorobenzene	0.15	0.085 J	0.91	0.51 J
alpha-Chlorotoluene	0.76	Not Detected	3.9	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.91	Not Detected
1,2,4-Trichlorobenzene	0.76	Not Detected UJ	5.6	Not Detected UJ
Hexachlorobutadiene	0.76	Not Detected	8.0	Not Detected
Naphthalene	0.76	0.31 J <b>J</b>	4.0	1.6 J

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	94	70-130



Client Sample ID: B30IA-5 10171S

Lab ID#: 1510351A-06A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102112	<b>Date of Collection:</b> 10/18/15 11:32:00 A		
<b>Dil. Factor:</b>	1.69	<b>Date of Analysis:</b> 10/21/15 04:17 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	0.23 J	4.2	1.2 J
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	0.75 J	1.7	1.6 J
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.24	0.95	1.3
Ethanol	0.84	5.2	1.6	9.7
Freon 113	0.17	0.074 J	1.3	0.57 J
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	9.7	2.0	23
2-Propanol	0.84	9.0	2.1	22
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.34	0.32 J	1.2	1.1 J
Methyl tert-butyl ether	0.17	Not Detected	0.61	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	0.28	0.60	0.99
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	0.91	2.5	2.7
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	Not Detected	0.58	Not Detected
Carbon Tetrachloride	0.17	0.050 J	1.1	0.31 J
2,2,4-Trimethylpentane	0.84	0.044 J	3.9	0.20 J
Benzene	0.17	0.13 J	0.54	0.41 J
1,2-Dichloroethane	0.17	0.029 J	0.68	0.12 J
Heptane	0.17	0.19	0.69	0.77
Trichloroethene	0.17	Not Detected	0.91	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.61	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
4-Methyl-2-pentanone	0.17	0.10 J	0.42 J	3.7
Toluene	0.17	0.97	0.64	
trans-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	1.68	Not Detected
2-Hexanone	0.84	Not Detected	3.5	Not Detected





## Air Toxics

Client Sample ID: B30IA-5 101715

Lab ID#: 1510351A-06A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102112	Date of Collection:	10/18/15 11:32:00 A
Dil. Factor:	1.69	Date of Analysis:	10/21/15 04:17 PM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3
Chlorobenzene	0.17	Not Detected	0.78
Ethyl Benzene	0.17	0.12 J	0.73
m,p-Xylene	0.17	0.40	0.73
o-Xylene	0.17	0.13 J	0.73
Styrene	0.17	0.24	0.72
Bromoform	0.17	Not Detected	1.7
Cumene	0.17	Not Detected	0.83
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2
Propylbenzene	0.17	Not Detected	0.83
4-Ethyltoluene	0.17	0.061 J	0.83
1,3,5-Trimethylbenzene	0.17	0.039 J	0.83
1,2,4-Trimethylbenzene	0.17	0.091 J	0.83
1,3-Dichlorobenzene	0.17	Not Detected	1.0
1,4-Dichlorobenzene	0.17	Not Detected	1.0
alpha-Chlorotoluene	0.84	Not Detected	4.4
1,2-Dichlorobenzene	0.17	Not Detected	1.0
1,2,4-Trichlorobenzene	0.84	Not Detected UJ	6.3
Hexachlorobutadiene	0.84	Not Detected	9.0
Naphthalene	0.84	Not Detected	4.4

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	93	70-130



Client Sample ID: B42IA-1 101715

Lab ID#: 1510351A-07A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v102113	Date of Collection:	10/18/15 12:38:00 P	
Dil. Factor:	1.68	Date of Analysis:	10/21/15 04:53 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	0.74 J	4.2	3.6 J
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	0.91	1.7	1.9
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.24	0.94	1.3
Ethanol	0.84	5.4	1.6	10
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	10	2.0	25
2-Propanol	0.84	1.2	2.1	2.9
Carbon Disulfide	0.84	6.9	2.6	22
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.34	0.71	1.2	2.5
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.17	0.18	0.67	0.73
Hexane	0.17	0.41	0.59	1.4
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	2.0	2.5	6.0
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	0.78 J	2.5	2.3 J
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	0.10 J	0.58	0.36 J
Carbon Tetrachloride	0.17	0.12 J	1.0	0.73 J
2,2,4-Trimethylpentane	0.84	0.11 J	3.9	0.52 J
Benzene	0.17	0.16 J	0.54	0.50 J
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	0.17	0.69	0.71
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	0.81	0.74	3.0
trans-1,3-Dichloropropene	0.17	Not Detected	0.71	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	0.74	Not Detected
2-Hexanone	0.84	Not Detected	0.74	Not Detected





## Air Toxics

Client Sample ID: B42IA-1 101715

Lab ID#: 1S103S1A-07A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102113	Date of Collection:	10/18/15 12:38:00 P
Dil. Factor:	1.68	Date of Analysis:	10/21/15 04:53 PM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3
Chlorobenzene	0.17	Not Detected	0.77
Ethyl Benzene	0.17	0.15 J	0.73
m,p-Xylene	0.17	0.51	0.73
o-Xylene	0.17	0.18	0.73
Styrene	0.17	0.063 J	0.72
Bromoform	0.17	Not Detected	1.7
Cumene	0.17	Not Detected	0.82
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2
Propylbenzene	0.17	Not Detected	0.82
4-Ethyltoluene	0.17	0.11 J	0.82
1,3,5-Trimethylbenzene	0.17	0.078 J	0.82
1,2,4-Trimethylbenzene	0.17	0.15 J	0.82
1,3-Dichlorobenzene	0.17	Not Detected	1.0
1,4-Dichlorobenzene	0.17	0.11 J	1.0
alpha-Chlorotoluene	0.84	Not Detected	4.3
1,2-Dichlorobenzene	0.17	Not Detected	1.0
1,2,4-Trichlorobenzene	0.84	Not Detected UJ	6.2
Hexachlorobutadiene	0.84	Not Detected	9.0
Naphthalene	0.84	0.24 J	4.4
			1.3 J

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	95	70-130



Client Sample ID: B42IA-2 101715

Lab ID#: 1510351A-08A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102114	<b>Date of Collection:</b> 10/18/15 7:54:00 AM		
<b>Dil. Factor:</b>	1.57	<b>Date of Analysis:</b> 10/21/15 05:49 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.78	0.52 J	3.9	2.6 J
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	0.73 J	1.6	1.5 J
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.1	Not Detected
Freon 11	0.16	0.21	0.88	1.2
Ethanol	0.78	3.2	1.5	6.1
Freon 113	0.16	0.066 J	1.2	0.50 J
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Acetone	0.78	5.2	1.9	12
2-Propanol	0.78	0.54 J	1.9	1.3 J
Carbon Disulfide	0.78	Not Detected	2.4	Not Detected
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	0.44	1.1	1.5
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Hexane	0.16	0.23	0.55	0.82
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	0.75 J	2.3	2.2 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.77	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Cyclohexane	0.16	0.087 J	0.54	0.30 J
Carbon Tetrachloride	0.16	0.077 J	0.99	0.49 J
2,2,4-Trimethylpentane	0.78	0.067 J	3.7	0.31 J
Benzene	0.16	0.098 J	0.50	0.31 J
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Heptane	0.16	0.10 J	0.64	0.43 J
Trichloroethene	0.16	Not Detected	0.84	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
4-Methyl-2-pentanone	0.16	0.062 J	0.64	0.25 J
Toluene	0.16	0.62	2.3	
trans-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Tetrachloroethene	0.16	Not Detected	1.0	Not Detected
2-Hexanone	0.78	Not Detected	1.0	Not Detected





## Air Toxics

Client Sample ID: B42IA-2 101715

Lab ID#: 1510351A-08A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102114	Date of Collection:	10/18/15 7:54:00 AM
Dil. Factor:	1.57	Date of Analysis:	10/21/15 05:49 PM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2
Chlorobenzene	0.16	Not Detected	0.72
Ethyl Benzene	0.16	Not Detected	0.68
m,p-Xylene	0.16	0.27	0.68
o-Xylene	0.16	0.087 J	0.68
Styrene	0.16	0.041 J	0.67
Bromoform	0.16	Not Detected	1.6
Cumene	0.16	0.026 J	0.77
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1
Propylbenzene	0.16	Not Detected	0.77
4-Ethyltoluene	0.16	0.074 J	0.77
1,3,5-Trimethylbenzene	0.16	Not Detected	0.77
1,2,4-Trimethylbenzene	0.16	0.072 J	0.77
1,3-Dichlorobenzene	0.16	Not Detected	0.94
1,4-Dichlorobenzene	0.16	Not Detected	0.94
alpha-Chlorotoluene	0.78	Not Detected	4.1
1,2-Dichlorobenzene	0.16	Not Detected	0.94
1,2,4-Trichlorobenzene	0.78	Not Detected UJ	5.8
Hexachlorobutadiene	0.78	Not Detected	8.4
Naphthalene	0.78	Not Detected	4.1

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	95	70-130





## Air Toxics

Client Sample ID: B42IA-3 101715

Lab ID#: 1510351A-09A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102115	Date of Collection: 10/18/15 7:52:00 AM		
Dil. Factor:	1.46	Date of Analysis: 10/21/15 06:25 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.73	0.54 J	3.6	2.7 J
Freon 114	0.15	Not Detected	1.0	Not Detected
Chloromethane	0.73	0.79	1.5	1.6
Vinyl Chloride	0.15	Not Detected	0.37	Not Detected
1,3-Butadiene	0.15	Not Detected	0.32	Not Detected
Bromomethane	0.73	Not Detected	2.8	Not Detected
Chloroethane	0.73	Not Detected	1.9	Not Detected
Freon 11	0.15	0.20	0.82	1.1
Ethanol	0.73	6.3	1.4	12
Freon 113	0.15	0.065 J	1.1	0.50 J
1,1-Dichloroethene	0.15	Not Detected	0.58	Not Detected
Acetone	0.73	4.9	1.7	12
2-Propanol	0.73	1.2	1.8	2.9
Carbon Disulfide	0.73	Not Detected	2.3	Not Detected
3-Chloropropene	0.73	Not Detected	2.3	Not Detected
Methylene Chloride	0.29	0.95	1.0	3.3
Methyl tert-butyl ether	0.15	Not Detected	0.53	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
Hexane	0.15	0.28	0.51	0.98
1,1-Dichloroethane	0.15	Not Detected	0.59	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.73	0.58 J	2.2	1.7 J
cis-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
Tetrahydrofuran	0.73	Not Detected	2.2	Not Detected
Chloroform	0.15	Not Detected	0.71	Not Detected
1,1,1-Trichloroethane	0.15	Not Detected	0.80	Not Detected
Cyclohexane	0.15	0.054 J	0.50	0.18 J
Carbon Tetrachloride	0.15	0.066 J	0.92	0.41 J
2,2,4-Trimethylpentane	0.73	0.32 J	3.4	1.5 J
Benzene	0.15	0.11 J	0.47	0.35 J
1,2-Dichloroethane	0.15	Not Detected	0.59	Not Detected
Heptane	0.15	0.13 J	0.60	0.55 J
Trichloroethene	0.15	Not Detected	0.78	Not Detected
1,2-Dichloropropane	0.15	Not Detected	0.67	Not Detected
1,4-Dioxane	0.15	Not Detected	0.53	Not Detected
Bromodichloromethane	0.15	Not Detected	0.98	Not Detected
cis-1,3-Dichloropropene	0.15	Not Detected	0.66	Not Detected
4-Methyl-2-pentanone	0.15	0.070 J	0.29 J	1.5
Toluene	0.15	0.41	0.55	
trans-1,3-Dichloropropene	0.15	Not Detected	0.66	Not Detected
1,1,2-Trichloroethane	0.15	Not Detected	0.88	Not Detected
Tetrachloroethene	0.15	Not Detected	0.96	Not Detected
2-Hexanone	0.73	Not Detected	3.0	Not Detected



## Air Toxics

Client Sample ID: B42IA-3 101715

Lab ID#: 1510351A-09A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102115	Date of Collection: 10/18/15 7:52:00 AM		
Dil. Factor:	1.46	Date of Analysis: 10/21/15 06:25 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.15	Not Detected	1.2	Not Detected
1,2-Dibromoethane (EDB)	0.15	Not Detected	1.1	Not Detected
Chlorobenzene	0.15	Not Detected	0.67	Not Detected
Ethyl Benzene	0.15	Not Detected	0.63	Not Detected
m,p-Xylene	0.15	0.26	0.63	1.1
o-Xylene	0.15	0.065 J	0.63	0.28 J
Styrene	0.15	0.040 J	0.62	0.17 J
Bromoform	0.15	Not Detected	1.5	Not Detected
Cumene	0.15	Not Detected	0.72	Not Detected
1,1,2,2-Tetrachloroethane	0.15	Not Detected	1.0	Not Detected
Propylbenzene	0.15	Not Detected	0.72	Not Detected
4-Ethyltoluene	0.15	0.071 J	0.72	0.35 J
1,3,5-Trimethylbenzene	0.15	0.042 J	0.72	0.21 J
1,2,4-Trimethylbenzene	0.15	0.070 J	0.72	0.34 J
1,3-Dichlorobenzene	0.15	Not Detected	0.88	Not Detected
1,4-Dichlorobenzene	0.15	Not Detected	0.88	Not Detected
alpha-Chlorotoluene	0.73	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.88	Not Detected
1,2,4-Trichlorobenzene	0.73	Not Detected UJ	5.4	Not Detected UJ
Hexachlorobutadiene	0.73	Not Detected	7.8	Not Detected
Naphthalene	0.73	Not Detected	3.8	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	94	70-130



Client Sample ID: B3042AA

Lab ID#: 1510351A-10A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102116	<b>Date of Collection:</b> 10/18/15 1:45:00 PM		
<b>Dil. Factor:</b>	1.88	<b>Date of Analysis:</b> 10/21/15 07:04 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.94	0.36 J	4.6	1.8 J
Freon 114	0.19	Not Detected	1.3	Not Detected
Chloromethane	0.94	1.0	1.9	2.1
Vinyl Chloride	0.19	Not Detected	0.48	Not Detected
1,3-Butadiene	0.19	Not Detected	0.42	Not Detected
Bromomethane	0.94	Not Detected	3.6	Not Detected
Chloroethane	0.94	Not Detected	2.5	Not Detected
Freon 11	0.19	0.24	1.0	1.3
Ethanol	0.94	2.6	1.8	4.9
Freon 113	0.19	0.094 J	1.4	0.72 J
1,1-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Acetone	0.94	7.9	2.2	19
2-Propanol	0.94	1.4	2.3	3.3
Carbon Disulfide	0.94	Not Detected	2.9	Not Detected
3-Chloropropene	0.94	Not Detected	2.9	Not Detected
Methylene Chloride	0.38	0.27 J	1.3	0.92 J
Methyl tert-butyl ether	0.19	Not Detected	0.68	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Hexane	0.19	0.46	0.66	1.6
1,1-Dichloroethane	0.19	Not Detected	0.76	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.94	1.6	2.8	4.8
cis-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Tetrahydrofuran	0.94	Not Detected	2.8	Not Detected
Chloroform	0.19	Not Detected	0.92	Not Detected
1,1,1-Trichloroethane	0.19	Not Detected	1.0	Not Detected
Cyclohexane	0.19	Not Detected	0.65	Not Detected
Carbon Tetrachloride	0.19	0.11 J	1.2	0.69 J
2,2,4-Trimethylpentane	0.94	0.12 J	4.4	0.54 J
Benzene	0.19	Not Detected	0.60	Not Detected
1,2-Dichloroethane	0.19	Not Detected	0.76	Not Detected
Heptane	0.19	0.22	0.77	0.88
Trichloroethene	0.19	Not Detected	1.0	Not Detected
1,2-Dichloropropane	0.19	Not Detected	0.87	Not Detected
1,4-Dioxane	0.19	Not Detected	0.68	Not Detected
Bromodichloromethane	0.19	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
4-Methyl-2-pentanone	0.19	0.068 J	0.77	0.28 J
Toluene	0.19	0.57		2.2
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
1,1,2-Trichloroethane	0.19	Not Detected	1.0	Not Detected
Tetrachloroethene	0.19	Not Detected	1.2	Not Detected
2-Hexanone	0.94	Not Detected	1.3	Not Detected





## Air Toxics

Client Sample ID: B3042AA

Lab ID#: 1510351A-10A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102116	Date of Collection: 10/18/15 1:45:00 PM		
Dil. Factor:	1.88	Date of Analysis: 10/21/15 07:04 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.19	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.19	Not Detected	1.4	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
Ethyl Benzene	0.19	0.084 J	0.82	0.36 J
m,p-Xylene	0.19	0.21	0.82	0.92
o-Xylene	0.19	0.11 J	0.82	0.48 J
Styrene	0.19	0.12 J	0.80	0.52 J
Bromoform	0.19	Not Detected	1.9	Not Detected
Cumene	0.19	Not Detected	0.92	Not Detected
1,1,2,2-Tetrachloroethane	0.19	Not Detected	1.3	Not Detected
Propylbenzene	0.19	Not Detected	0.92	Not Detected
4-Ethyltoluene	0.19	Not Detected	0.92	Not Detected
1,3,5-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,3-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.94	Not Detected	4.9	Not Detected
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.94	Not Detected UJ	7.0	Not Detected UJ
Hexachlorobutadiene	0.94	Not Detected	10	Not Detected
Naphthalene	0.94	Not Detected	4.9	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130



Client Sample ID: B8IA-2 101715

Lab ID#: 1510351A-11A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v102117	Date of Collection: 10/18/15 11:45:00 A		
Dil. Factor:	1.57	Date of Analysis: 10/21/15 07:40 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.78	0.38 J	3.9	1.9 J
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	0.96	1.6	2.0
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.1	Not Detected
Freon 11	0.16	0.21	0.88	1.2
Ethanol	0.78	1.6	1.5	2.9
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Acetone	0.78	9.2 J	1.9	22
2-Propanol	0.78	0.68 J	1.9	1.7 J
Carbon Disulfide	0.78	0.16 J	2.4	0.48 J
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	0.25 J	1.1	0.87 J
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Hexane	0.16	0.21	0.55	0.73
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	2.0 J	2.3	5.8
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.77	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Cyclohexane	0.16	0.092 J	0.54	0.32 J
Carbon Tetrachloride	0.16	0.088 J	0.99	0.55 J
2,2,4-Trimethylpentane	0.78	0.047 J	3.7	0.22 J
Benzene	0.16	0.099 J	0.50	0.32 J
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Heptane	0.16	0.15 J	0.64	0.62 J
Trichloroethene	0.16	Not Detected	0.84	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
4-Methyl-2-pentanone	0.16	0.095 J	0.64	0.39 J
Toluene	0.16	0.26		0.99
trans-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.78	0.24 J		0.99 J





## Air Toxics

Client Sample ID: B8IA-2 101715

Lab ID#: 1510351A-11A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102117	Date of Collection: 10/18/15 11:45:00 A		
Dil. Factor:	1.57	Date of Analysis: 10/21/15 07:40 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.72	Not Detected
Ethyl Benzene	0.16	Not Detected	0.68	Not Detected
m,p-Xylene	0.16	0.13 J	0.68	0.56 J
o-Xylene	0.16	0.058 J	0.68	0.25 J
Styrene	0.16	Not Detected	0.67	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected J	0.77	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.77	Not Detected
4-Ethyltoluene	0.16	0.052 J	0.77	0.26 J
1,3,5-Trimethylbenzene	0.16	Not Detected	0.77	Not Detected
1,2,4-Trimethylbenzene	0.16	0.063 J	0.77	0.31 J
1,3-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
alpha-Chlorotoluene	0.78	Not Detected	4.1	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,2,4-Trichlorobenzene	0.78	Not Detected UJ	5.8	Not Detected UJ
Hexachlorobutadiene	0.78	Not Detected	8.4	Not Detected
Naphthalene	0.78	Not Detected	4.1	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	96	70-130

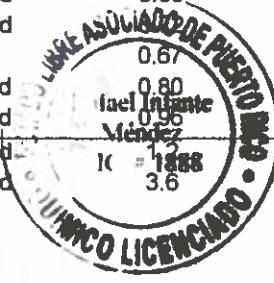


Client Sample ID: B8IA-2D 101715

Lab ID#: 1510351A-12A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102118	<b>Date of Collection:</b> 10/18/15 11:45:00 A		
<b>Dil. Factor:</b>	1.77	<b>Date of Analysis:</b> 10/21/15 08:15 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.88	0.47 J	4.4	2.3 J
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.88	0.94	1.8	1.9
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.88	Not Detected	3.4	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
Freon 11	0.18	0.19	0.99	1.1
Ethanol	0.88	1.5	1.7	2.9
Freon 113	0.18	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Acetone	0.88	3.8 J	2.1	9.0
2-Propanol	0.88	0.37 J	2.2	0.91 J
Carbon Disulfide	0.88	Not Detected J	2.8	Not Detected
3-Chloropropene	0.88	Not Detected	2.8	Not Detected
Methylene Chloride	0.35	0.13 J	1.2	0.44 J
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Hexane	0.18	0.23	0.62	0.80
1,1-Dichloroethane	0.18	Not Detected	0.72	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.88	0.66 J	2.6	1.9 J
cis-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.86	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.96	Not Detected
Cyclohexane	0.18	Not Detected	0.61	Not Detected
Carbon Tetrachloride	0.18	0.072 J	1.1	0.45 J
2,2,4-Trimethylpentane	0.88	0.041 J	4.1	0.19 J
Benzene	0.18	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.72	Not Detected
Heptane	0.18	0.077 J	0.72	0.31 J
Trichloroethene	0.18	Not Detected	0.95	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.82	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.80	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.67	Not Detected
Toluene	0.18	0.28	0.80	1.0
trans-1,3-Dichloropropene	0.18	Not Detected	0.96	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	1.3	Not Detected
Tetrachloroethene	0.18	Not Detected	1.88	Not Detected
2-Hexanone	0.88	Not Detected	3.6	Not Detected





## Air Toxics

Client Sample ID: B8IA-2D 101715

Lab ID#: 1510351A-12A

## MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v102118	Date of Collection: 10/18/15 11:45:00 A		
Dil. Factor:	1.77	Date of Analysis: 10/21/15 08:15 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.81	Not Detected
Ethyl Benzene	0.18	Not Detected	0.77	Not Detected
m,p-Xylene	0.18	0.13 J	0.77	0.55 J
o-Xylene	0.18	0.045 J	0.77	0.20 J
Styrene	0.18	Not Detected	0.75	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	0.083 J	0.87	0.41 J
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.87	Not Detected
4-Ethyltoluene	0.18	0.058 J	0.87	0.29 J
1,3,5-Trimethylbenzene	0.18	Not Detected	0.87	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.87	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.88	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.88	Not Detected UJ	6.6	Not Detected UJ
Hexachlorobutadiene	0.88	Not Detected	9.4	Not Detected
Naphthalene	0.88	Not Detected	4.6	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130



Client Sample ID: B8AA-1 101715

Lab ID#: 1510351A-13A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102119	<b>Date of Collection:</b> 10/18/15 11:45:00 A		
<b>Dil. Factor:</b>	1.58	<b>Date of Analysis:</b> 10/21/15 08:57 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.79	0.53 J	3.9	2.6 J
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.79	1.0	1.6	2.1
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.79	Not Detected	3.1	Not Detected
Chloroethane	0.79	Not Detected	2.1	Not Detected
Freon 11	0.16	0.22	0.89	1.3
Ethanol	0.79	1.6	1.5	3.1
Freon 113	0.16	0.079 J	1.2	0.60 J
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.79	5.0	1.9	12
2-Propanol	0.79	0.50 J	1.9	1.2 J
Carbon Disulfide	0.79	Not Detected	2.5	Not Detected
3-Chloropropene	0.79	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	0.15 J	1.1	0.53 J
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Hexane	0.16	0.61	0.56	2.2
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.79	0.56 J	2.3	1.7 J
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.79	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.77	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Cyclohexane	0.16	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.16	0.088 J	0.99	0.55 J
2,2,4-Trimethylpentane	0.79	0.22 J	3.7	1.0 J
Benzene	0.16	0.14 J	0.50	0.44 J
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Heptane	0.16	0.40	0.65	1.6
Trichloroethene	0.16	Not Detected	0.85	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.73	Not Detected
1,4-Dioxane	0.16	Not Detected	0.57	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.72	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	8.65	Not Detected
Toluene	0.16	0.30	1.1	
trans-1,3-Dichloropropene	0.16	Not Detected	0.40	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	1.0	Not Detected
Tetrachloroethene	0.16	Not Detected	Viernes 1.1	Not Detected
2-Hexanone	0.79	Not Detected	IC # 188832	Not Detected



Air Toxics

Client Sample ID: B8AA-1 101715

Lab ID#: 1S103S1A-13A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	v102119	<b>Date of Collection:</b> 10/18/15 11:45:00 A		
<b>Dil. Factor:</b>	1.58	<b>Date of Analysis:</b> 10/21/15 08:57 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.73	Not Detected
Ethyl Benzene	0.16	0.061 J	0.69	0.27 J
m,p-Xylene	0.16	0.13 J	0.69	0.55 J
o-Xylene	0.16	0.099 J	0.69	0.43 J
Styrene	0.16	Not Detected	0.67	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.78	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.78	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.78	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,2,4-Trimethylbenzene	0.16	0.054 J	0.78	0.27 J
1,3-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
alpha-Chlorotoluene	0.79	Not Detected	4.1	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,2,4-Trichlorobenzene	0.79	Not Detected UJ	5.9	Not Detected UJ
Hexachlorobutadiene	0.79	Not Detected	8.4	Not Detected
Naphthalene	0.79	Not Detected	4.1	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130





## Air Toxics

### Sample Transportation Notice

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FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 1 of 2

Project Manager Terry Taylor  
Collected by: (Print and Sign) David Lindstrand D.L.  
Company AMA1 Email \_\_\_\_\_  
Address 2700 Westchester City Purchase State NY zip 10577  
Phone 914-251-0400 Fax \_\_\_\_\_

Project Info:  
P.O. # \_\_\_\_\_  
Project # \_\_\_\_\_  
Project Name BMS VI

Turn Around Time:	Lab Use Only		
	<input type="checkbox"/> Normal	<input checked="" type="checkbox"/> Rush	Pressurization Gas:
3-Day	specify	N <sub>2</sub>	He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Initial	Final	Receipt	Final (est)
01A	B301A - 1 101715	34753	10-18-15	1100	To-15, CH4	28	6.5		
01A	B301A - 2 101715	6L1270	10-18-15	1126	To-15, CH4	29	6.5		
01A	B301A - 3 101715	34496	10-18-15	1159	To-15, CH4	30	8		
01A	B301A - 4 101715	33898	10-18-15	1138	To-15, CH4	27	5		
02A	B301A - 4D 101715	12910	10-18-15	1138	To-15, CH4	29	4		
02A	B301A - 5 101715	916	10-18-15	1132	To-15, CH4	29	6		
02A	B421A - 1 101715	5681	10-18-15	1238	To-15, CH4	29	6		
02A	B421A - 2 101715	6L0017	10-18-15	0754	To-15, CH4	30	5		
02A	B421A - 3 101715	31746	10-18-15	0752	To-15, CH4	30	3		
10A	B3042AA	901	10-18-15	1345	To-15, CH4	29.5	8.5		

Relinquished by: (signature) David Lindstrand Date/Time 10-19-15 12:00

Received by: (signature) S. Smith Date/Time 10-20-15 1035

Notes: Report results to MDL

Relinquished by: (signature) Date/Time Received by: (signature) Date/Time  
Relinquished by: (signature) Date/Time Received by: (signature) Date/Time

Shipped via FedEx by AMA1  
Tracking No. 774767482387

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
AMA1	1510351	10	Good	Yes	No (None)



Air Toxics

### **Sample Transportation Notice**

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FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 2 of 2

Project Manager <u>Terry Taylor</u>		Project Info:	
Collected by: (Print and Sign) <u>David Lindstrand</u>		P.O. #	Turn Around Time:
Company <u>AMAI</u>		Email _____	<input type="checkbox"/> Normal
Address <u>2700 Westchester</u> City <u>Purchase</u> State <u>NY</u> Zip <u>10527</u>		Project #	Date:
Phone <u>914-251-0400</u>		Project Name <u>BMS VI</u>	<input checked="" type="checkbox"/> Lab Use Only <input type="checkbox"/> Pressurized by:
		<input checked="" type="checkbox"/> Rush <u>3-Day</u> Specify _____	Pressurization Gas: <u>N<sub>2</sub></u> <u>He</u>

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum		
			Initial	Final		Receipt	Final (psi)	
11A	B81A - 2	101715	6L1334	10-18-15	1145	To-15, CH <sub>4</sub> , Naphthalene	30	1.5
12A	B81A - 2D	101715	31226	10-18-15	1145	To-15, CH <sub>4</sub> , Naphthalene	30	7
13A	B84A - 1	101715	14881	10-18-15	1145	To-15, CH <sub>4</sub> , Naphthalene	30	4
XMA	B301A-1	101715	5751	10-18-15	0806	No Analyze	28	0
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Stabili-01

Released by: (signature) <i>Dawn Kintner</i>	Date/Time 10-19-15 12:00	Received by: (signature) <i>ZEPH</i>	Date/Time 10-20-15 16:35	Notes: Report results to MDL
Relinquished by: (signature) <i></i>	Date/Time	Received by: (signature) <i></i>	Date/Time	Skipped via FedEx by AMRI
Relinquished by: (signature) Date/Time		Received by: (signature) Date/Time		Tracking No.: 7A76482387
Lab Use Only	Shipper Name <i>T. Foster</i>	Air Bill # <i>W</i>	Temp (C) <i>60w</i>	Condition <i>None</i>
				Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>None</i>
				Work Order # <i>1510351</i>

## DATA REVIEW WORKSHEETS

Project Number: 1510351A  
Date: 10/18/2015

### REVIEW OF VOLATILE ORGANIC PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: QC criteria from "Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999"; USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #4. October, 2006). The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcoded (laboratory name) Eurofins - Air Toxics data package received has been reviewed and the quality control and performance data summarized. The data review for VOCs included:

Lab. Project/SDG No.: 1510351A  
No. of Samples: 13

Sample matrix: Air

Trip blank No.: -  
Field blank No.: -  
Equipment blank No.: -  
Field duplicate No.: B30IA-4\_101715/B30IA-4D\_101715; B8IA-2 101715/B8IA-2D\_101715

X Data Completeness  
 X Holding Times  
 X GC/MS Tuning  
 X Internal Standard Performance  
 X Blanks  
 X Surrogate Recoveries  
 N/A Matrix Spike/Matrix Spike Duplicate

X Laboratory Control Spikes  
 X Field Duplicates  
 X Calibrations  
 X Compound Identifications  
 X Compound Quantitation  
 X Quantitation Limits

Overall Comments: VOCs\_by\_method\_TO-15

#### Definition of Qualifiers:

J- Estimated results  
U- Compound not detected  
R- Rejected data  
UJ- Estimated nondetect

Reviewer: Rafael Defant  
Date: 11/11/2015

## DATA REVIEW WORKSHEETS

## DATA COMPLETENESS

## MISSING INFORMATION

**DATE LAB. CONTACTED**

DATE RECEIVED

## **DATA REVIEW WORKSHEETS**

All criteria were met   
Criteria were not met  
and/or see below

## HOLDING TIMES

The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

## Criteria

Aqueous samples – 14 days from sample collection for preserved samples ( $\text{pH} \leq 2$ ,  $4^\circ\text{C}$ ), no air bubbles.

Aqueous samples – 7 days from sample collection for unpreserved samples, 4°C, no air bubbles.

**Soil samples- 7 days from sample collection.**

Cooler temperature (Criteria: 4 + 2 °C): N/A – summa canisters

## Actions

If the VOCs vial(s) have air bubbles, estimate positive results (J) and reject nondetects (R).

If the % solids of soil samples is 10-50%, estimates positive results (J) and nondetects (UJ)

If the % solid of soil samples is < 10%, estimate positive results (J) and reject nondetects (R).

If holding times are exceeded but < 14 days beyond criteria, estimate positive results (J) and nondetects (U,J).

If holding times are exceeded but < 28 days beyond criteria, estimate positive results (J) and reject nondetects (R).

If holding times are grossly exceeded (> 28 days beyond criteria), reject all results (R).

If samples were not iced or if the ice were melted ( $> 10^{\circ}\text{C}$ ), estimate positive results (J) and nondetects (J,J).

## DATA REVIEW WORKSHEETS

All criteria were met X  
Criteria were not met see below \_\_\_\_\_

### GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

X The BFB performance results were reviewed and found to be within the specified criteria.

X BFB tuning was performed for every 24 hours of sample analysis.

If no, use professional judgment to determine whether the associated data should be accepted, qualified or rejected.

List	the	samples	affected:
_____	_____	_____	_____

If mass calibration is in error, all associated data are rejected.

## DATA REVIEW WORKSHEETS

All criteria were met X  
Criteria were not met  
and/or see below \_\_\_\_\_

### CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration: 10/08/15  
Dates of continuing calibration: 10/21/15  
Instrument ID numbers: MSD-V  
Matrix/Level: Air/low

DATE	LAB ID#	FILE	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
Initial and continuing calibration met the method performance criteria.					

#### Criteria

All RFs must be > 0.05 regardless of method requirements for SPCC.

All %RSD must be  $\leq$  15 % regardless of method requirements for CCC.

All %Ds must be  $\leq$  30% regardless of method requirements for CCC.

Method TO-15 does not specify criterion for the curve correlation coefficient (r). A limit for r of  $\geq$  0.995 has therefore been utilized as professional judgment.

#### Actions

If any compound has an initial RF or a continuing RF of  $< 0.05$ , estimate positive results (J) and reject nondetects (R), regardless of method requirements.

If any compound has a %RSD  $> 15\%$ , estimate positive results (J) and use professional judgment to qualify nondetects.

If any compound has a %RSD  $> 90\%$ , estimate positive results (J) and reject nondetects (R).

If any compound has a % D  $> 30\%$ , estimate positive results (J) and reject nondetects (R).

If any compound has a % D  $> 30\%$ , estimate positive results (J) and nondetects (UJ).

If any compound has a % D  $> 90\%$ , estimate positive results (J) and reject nondetects (R).

If any compound has r  $< 0.995$ , estimate positive results and nondetects.

A separate worksheet should be filled for each initial curve

## DATA REVIEW WORKSHEETS

All criteria were met \_\_\_\_\_  
Criteria were not met  
and/or see below  \_\_\_\_\_

### V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

#### Laboratory blanks

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
<u>All method blank meet method specific criteria except for the followings:</u>				
<u>10/21/15</u>	<u>1510351A-14A</u>	<u>Air/low</u>	<u>Ethanol</u>	<u>0.29 ppbv</u>
			<u>Acetone</u>	<u>0.13 ppbv</u>
			<u>Methylene chloride</u>	<u>0.057 ppbv</u>
			<u>Hexane</u>	<u>0.086 ppbv</u>

Note: no action taken; analyte concentrations below the action level for blanks.

<u>Summa canisters met cleaning certification criteria</u>
_____
_____

#### Field/Equipment/Trip blank

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
<u>No field/trip/equipment blanks analyzed with this data package.</u>				
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

## DATA REVIEW WORKSHEETS

All criteria were met   
Criteria were not met  
and/or see below

## VB. BLANK ANALYSIS RESULTS (Section 3)

## Blank Actions

Action Levels (ALs) should be based upon the highest concentration of contaminant determined in any blank. Do not qualify any blank with another blank. The ALs for samples which have been diluted should be corrected for the sample dilution factor and/or % moisture, where applicable. No positive sample results should be reported unless the concentration of the compound in the samples exceeds the ALs:

ALs = 10x the amount of common contaminants (methylene chloride, acetone, 2-butanone, and toluene)

ALs = 5x for any other compounds

**Specific actions are as follows:**

If the concentration is < sample quantitation limit (SQL) and  $\leq$  AL, report the compound as not detected (U) at the SQL.

If the concentration is  $\geq$  SQL but  $\leq$  AL, report the compound as not detected (U) at the reported concentration.

If the concentration is > SQL and > AL, report the concentration unqualified.

### **Notes:**

**High and low level blanks must be treated separately**

Compounds qualified "U" for blank contamination are still considered "hits" when qualifying for calibration criteria.

## DATA REVIEW WORKSHEETS

All criteria were met  \_\_\_\_\_  
Criteria were not met  
and/or see below \_\_\_\_\_

### SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.

List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.

Matrix: solid/aqueous

SAMPLE ID	SURROGATE COMPOUND	ACTION
1,2-DICHLOROETHANE- d4	Toluene- d8	4-BFB

\_Surrogate\_recoveries\_within\_laboratory\_control\_limits\_\_\_\_\_

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QC Limits\* (Air)

LL\_to\_UL\_70\_to\_130\_      \_70\_to\_130\_ \_70\_to\_130\_

- \* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
- \* If QC limits are not available, use limits of 80 – 120 % for aqueous and 70 – 130 % for solid samples.

Actions:

QUALITY	%R < 10%	%R = 10% - LL	%R > UL
Positive results	J	J	J
Nondetects results	R	UJ	Accept

Surrogate action should be applied:

If one or more surrogate in the VOC fraction is out of specification, but has a recovery of > 10%.

If any one surrogate in a fraction shows < 10 % recovery.

## DATA REVIEW WORKSHEETS

All criteria were met \_\_\_\_\_  
Criteria were not met  
and/or see below N/A \_\_\_\_\_

### VII. A MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples. If any % R in the MS or MSD falls outside the designated range, the reviewer should determine if there are matrix effects, i.e. LCS data are within the QC limits but MS/MSD data are outside QC limit.

#### 1. MS/MSD Recoveries and Precision Criteria

The laboratory should use one MS and a duplicate analysis of an unspiked field sample if target analytes are expected in the sample. If target analytes are not expected, MS/MSD should be analyzed.

List the %Rs, RPD of the compounds which do not meet the criteria.

Sample ID: \_\_\_\_\_ Matrix/Level: \_\_\_\_\_

MS OR MSD	COMPOUND	% R	RPD	QC LIMITS	ACTION
<u>MS/MSD_are_not_required_as_part_of_Method_TO-15;_blank_spike_used_to_assess_accuracy</u>					
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- \* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
- \* If QC limits are not available, use limits of 70 – 130 %.

Actions:

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

MS/MSD criteria apply only to the unspiked sample, its dilutions, and the associated MS/MSD samples:

- If the % R for the affected compounds were < LL (or 70 %), qualify positive results (J) and nondetects (UJ).
- If the % R for the affected compounds were > UL (or 130 %), only qualify positive results (J).
- If 25 % or more of all MS/MSD %R were < LL (or 70 %) or if two or more MS/MSD %Rs were < 10%, qualify all positive results (J) and reject nondetects (R).

A separate worksheet should be used for each MS/MSD pair.

## **DATA REVIEW WORKSHEETS**

All criteria were met \_\_\_\_\_  
Criteria were not met  
and/or see below N/A

## VII. B MATRIX SPIKE/MATRIX SPIKE DUPLICATE

## MS/MSD – Unspiked Compounds

It should be noted that Method TO-15 does not specify a MS/MSD criteria for the unspiked compounds in the sample. A %RSD of < 50% has therefore been utilized as professional judgment.

If all target analytes were spiked in the MS/MSD, this review element is not applicable.

List the %RSD of the compounds which do not meet the criteria.

**Sample ID:** \_\_\_\_\_ **Matrix/Level/Unit:** \_\_\_\_\_

#### **Actions:**

- \* If the % RSD > 50, qualify the positive result in the unspiked samples as estimated (J).
  - \* If the % RSD is not calculated (NC) due to nondetected value, use professional judgment to qualify the data.

## **DATA REVIEW WORKSHEETS**

All criteria were met  Criteria were not met  
and/or see below

## VIII. LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices.

## 1. LCS Recoveries Criteria

Where LCS spiked with the same analyte at the same concentrations as the MS/MSD?

Yes or No. If no make note in data review memo.

**List the %R of compounds which do not meet the criteria**

LCS ID COMPOUND % R QC LIMIT

LCS/LCSD % recoveries and RPD within laboratory control limits.

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- \* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
  - \* If QC limits are not available, use limits of 70 – 130 %.

## **Actions:**

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

All analytes in the associated sample results are qualified for the following criteria.

If 25 % of the LCS recoveries were < LL (or 70 %), qualify all positive results (j) and reject nondetects (R).

If two or more LCS were below 10 %, qualify all positive results as (J) and reject nondetects (R).

## 2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix? Yes or No.

If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected.

## DATA REVIEW WORKSHEETS

All criteria were met  \_\_\_\_\_  
Criteria were not met  
and/or see below \_\_\_\_\_

### IX. LABORATORY DUPLICATE PRECISION

Sample IDs: LCS/LCSD

Matrix: Air

Laboratory duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.

Suggested criteria: RPD  $\pm$  25% for air samples. If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
RPD within laboratory and generally acceptable control limits.					

#### Actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

## DATA REVIEW WORKSHEETS

All criteria were met \_\_\_\_\_  
 Criteria were not met  
 and/or see below X \_\_\_\_\_

### IX. FIELD DUPLICATE PRECISION

Sample IDs: B30IA-4\_101715/B30IA-4D\_101715      Matrix: Air

Field duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.

Suggested criteria: RPD  $\pm$  25% for air samples. If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Acetone	0.09452	12	8.6	33 %	Qualify results (J) in sample and duplicate
Hexane	0.0265	0.36	0.23	55 %	Qualify results (J) in sample and duplicate
4-methyl-2-pentanone	0.02575	0.098	0.70	151 %	Qualify results (J) in sample and duplicate
Toluene	0.01219	1.0	0.44	78 %	Qualify results (J) in sample and duplicate
Styrene	0.02529	0.20	0.091	75 %	Qualify results (J) in sample and duplicate
1,2,4-trimethylbenzene	0.02590	0.062	0.13	100 %	Qualify results (J) in sample and duplicate
Naphthalene	0.06201	0.49	0.31	45 %	Qualify results (J) in sample and duplicate

#### Actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

## DATA REVIEW WORKSHEETS

All criteria were met \_\_\_\_\_  
 Criteria were not met  
 and/or see below X \_\_\_\_\_

### IX. FIELD DUPLICATE PRECISION

Sample IDs: B8IA-2 101715/B8IA-2D\_101715 Matrix: Air

Field duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.

Suggested criteria: RPD  $\pm$  25% for air samples. If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Acetone	0.09452	9.2	3.8	83 %	Qualify results (J) in sample and duplicate
2-propanol	0.09402	0.68	0.37	59 %	Qualify results (J) in sample and duplicate
Carbon disulfide	0.05416	0.16	ND	-	Qualify results (J) in sample and duplicate
Methylene chloride	0.02059	0.25	0.13	63 %	Qualify results (J) in sample and duplicate
Methyl ethyl ketone	0.110621	2.0	0.66	101 %	Qualify results (J) in sample and duplicate
Cyclohexane	0.02946	0.092	ND	-	No action
Benzene	0.02542	0.099	ND	-	No action
Heptane	0.03158	0.15	0.077	64 %	Qualify results (J) in sample and duplicate
4-methyl-2-pentanone	0.02575	0.095	ND	-	No action
2-hexanone	0.09475	0.24	ND	-	No action
1,2,4-trimethylbenene	0.02590	0.063	ND	-	No action
Cumene	0.01349	ND	0.083	-	Qualify results (J) in sample and duplicate

#### Actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

## DATA REVIEW WORKSHEETS

All criteria were met X  
Criteria were not met  
and/or see below \_\_\_\_\_

### X. INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

List the internal standard area of samples which do not meet the criteria.

- \* Area of +40% or -40% of the IS area in the associated calibration standard.
- \* Retention time (RT) within  $\pm 0.06$  seconds of the IS area in the associated calibration standard.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE	ACTION RANGE
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\_Internal\_standard\_area\_and\_retention\_times\_within\_laboratory\_control\_limits\_for\_both\_samples\_and\_calibration\_standards

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Actions:

1. IS actions should be applied to the compound quantitated with the out-of-control ISs

QUALITY	IS AREA < -40%		IS AREA > +40%
Positive results	J		J
Nondetected results	R		ACCEPT

2. If a IS retention time varies more than 0.330 seconds, the chromatographic profile for that sample must be examined to determine if any false positive or negative exists. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for the sample fraction.

## DATA REVIEW WORKSHEETS

All criteria were met  X  
Criteria were not met  
and/or see below \_\_\_\_\_

### XII. SAMPLE QUANTITATION

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

1510351A-01A

2-propanol      RF = 6.45590

$$[ ] = (1895496)(5.0)/(95654)(6.4590)$$

$$= 15 \text{ ppbv} \text{ OK}$$

## DATA REVIEW WORKSHEETS

All criteria were met \_\_\_\_\_  
Criteria were not met  
and/or see below \_\_\_\_\_

## XII. QUANTITATION LIMITS

A. Dilution performed

#### B. Percent Solids

**List samples which have  $\leq$  50 % solids**

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#### **Actions:**

If the % solids of a soil sample is 10-50%, estimate positive results (J) and nondetects (UJ)

If the % solids of a soil sample is < 10%, estimate positive results (J) and reject nondetects (R)